



PATENT

Client-Matter No.:

66661-041 (P-IS 5150)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of ) Confirmation No:  
Hood et al. ) 2563  
Serial No.: 10/062,299 ) Group Art Unit: 1631  
Filed: January 31, 2002 ) Examiner:  
For: GENE DISCOVERY FOR ) C. Smith  
THE SYSTEM ASSIGNMENT OF )  
GENE FUNCTION )

Commissioner for Patents  
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**RESPONSE TO RESTRICTION REQUIREMENT**

Responsive to the Restriction Requirement mailed  
October 28, 2003, consideration of the following remarks is  
respectfully requested.

Claims 1 to 49 are pending, and have been restricted  
under 35 U.S.C. § 121 into the following six groups:

Group I: Claims 1-7, directed to methods for  
assigning a cellular function to a component of a  
biochemical system determined by finding  
differences in component shape spaces of

reference and perturbed states focusing at the component level;

Group II: Claims 18-21, directed to methods for assigning a cellular function to a component of a biochemical system determined by finding differences in network shape spaces of reference and perturbed states focusing at the network level;

Group III: Claims 22-35, directed to methods for assigning cellular function to a component of a biochemical system determined by comparing an initially selected data element to a reference;

Group IV: Claims 36-41, directed to methods for identifying a component of a biochemical network based on an altered multidimensional coordinate point in response to perturbation;

Group V: Claims 42-46, directed to methods for identifying functionally interactive components of biochemical network based on integration of two sets of linked components having one of two common data elements; and

Group VI: Claims 47-49, directed to methods for identifying a compound that restores a biochemical system to a reference state.

*Election of invention*

Applicants traverse the restriction requirement for the reasons stated below. Nevertheless, in order to be responsive to the Office Action, Applicants elect the invention of Group III, claims 22-35, directed to methods for assigning a cellular function to a component of a biochemical system that involve comparing a multidimensional coordinate point to a reference data element region, for examination. Applicants reserve the right to pursue prosecution of non-elected subject matter in one or more related applications that claim the benefit of priority to the subject application.

*Regarding restriction of Groups III and I*

The restriction requirement is traversed with respect to the division of the claims of elected Group III from those of Group I. Applicants submit that, while the claims of Group III are patentably distinct from the claims of Group I, a thorough search of the claims of Group III will result in art relevant to the examination of the claims of Group I. The claims of Group III are directed to methods for assigning a cellular function to a component of a biochemical system that involve perturbing a component of a network in a reference biochemical system; determining a multidimensional coordinate point representing a data element of one or more components of a perturbed biochemical system; comparing the multidimensional coordinate point to a reference data element region, and determining if the multidimensional coordinate point is within or outside the reference data element region. The claims of

Group I also are directed to methods for assigning a cellular function to a component of a biochemical system. The methods involve perturbing a component within the biochemical system; determining a perturbed multidimensional shape space for one or more components of a pathway in the perturbed biochemical system; and identifying a multidimensional coordinate point corresponding to a component of the perturbed pathway altered between reference and perturbed multidimensional shape spaces.

Applicants point out that the claimed methods of Groups III and I similarly involve perturbing a component of a reference biochemical system. Specifically, claim 22 (Group III) recites perturbing a component of a network of a reference biochemical system, and independent claim 1 (Group I) recites perturbing a component within a biochemical system in a reference state. In addition, the claimed methods of Groups III and I involve determining a multidimensional coordinate point corresponding to a perturbed component, with claim 22 reciting determining the multidimensional coordinate point with respect to a reference data element region, which is a region of multidimensional shape space, and claim 1 reciting identifying the multidimensional coordinate point with respect to multidimensional shape space.

In view of the above, Applicants submit that a search of the claims of Group III will overlap with a search of the claims of Group I. In this regard, a search of methods in which a component of a biochemical system is perturbed, and a multidimensional coordinate point corresponding to perturbed component is determined with respect to multidimensional shape

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space will reveal art relevant to the claims of both elected Group III and Group I because, as described above, the claims of Groups III and I relate to assigning a cellular function to a component of a biochemical system that involve perturbing a component within a biochemical system in a reference state and identifying the multidimensional coordinate point with respect to multidimensional shape space. In view of the overlapping body of literature relevant to the claims of Groups III and I, Applicants submit that the Examiner would not be seriously burdened to search and examine the claims of Groups III and I together, and doing so would increase the efficiency of the search and examination process for this application.

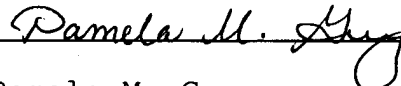
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**CONCLUSION**

In view of the remarks submitted herein, Applicants elect claims 22-35 of Group III for examination, and request that the Examiner reconsider the restriction requirement and examine claims 1-7 (Group I) together with the elected claims. The Examiner is invited to contact the undersigned agent if there are any questions.

Respectfully submitted,

Date: November 25, 2003

  
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image

11/28/03

1631

AMENDMENT TRANSMITTAL LETTER		CLIENT-MATTER NO.: 66661-041 (P-IS 5150)	
SERIAL NO: 10/062,299	FILING DATE: January 31, 2002	EXAMINER: C. Smith	GROUP ART UNIT: 1631 CONFIRMATION NO.: 2563
INVENTION: GENE DISCOVERY FOR THE SYSTEM ASSIGNMENT OF GENE FUNCTION			

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Transmitted herewith is a response to the Restriction Requirement mailed October 28, 2003, in the above-identified application.

X Small Entity status of this application has been established under 37 CFR 1.27.

     Request for a one-month extension of time (in duplicate).

X No additional claims fee is required.

     An additional claims fee is required and has been calculated as shown below:

CLAIMS AS AMENDED

	NUMBER AFTER AMEND- MENT		HIGHEST NUMBER PREVIOUSLY PAID FOR		NUMBER OF EXTRA CLAIMS PRESENTED	RATE			FEE		
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INDEPEN- DENT CLAIMS	9	-	9	-	0	x \$42	\$84	=	\$	\$	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM			_____YES		_____X NO		\$140	\$280	=	\$	\$
						TOTAL ADDITIONAL FEE			\$0	\$	

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Respectfully submitted,

November 25, 2003  
Date

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